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Top emitters able to ramp up climate ambition in 2020

Review of climate action finds G20 not on track to meet Paris goals, but positive trends in some countries

Carbon emissions from the world's 20 biggest economies are rising. None of the G20 countries have plans that will put them on track to limit global warming to 1.5°C, despite the fact that most are technically capable and have economic incentives. To keep the Paris Agreement's 1.5°C goal within reach, G20 countries will have to increase their 2030 emission targets by 2020 and significantly scale up mitigation, adaptation and finance over the next decade.

These findings are detailed in the new 'Brown to Green Report 2019' published today by the Climate Transparency partnership, an international research collaboration. The report is the most comprehensive review of G20 countries' climate performance, mapping achievements and drawbacks in their efforts to reduce emissions, adapt to climate impacts and green the financial system.

Many of the current 2030 climate targets under the Paris Agreement (Nationally Determined Contributions - NDCs) are too weak, with about half of the G20 countries projected to meet or overachieve their inadequate NDCs. There is plenty of room for enhanced ambition among all G20 countries.

"Just one year before the critical deadline the findings give us hope that countries will find the political will to commit to higher emission reduction targets in 2020 as they promised under the Paris Agreement", says Alvaro Umaña, the Co-Chair of Climate Transparency and Former Minister of Environment and Energy of Costa Rica. "For the first time, the report identifies untapped potential and key opportunities for countries to ramp up ambition and as such will be a valuable tool for governments when they update their climate plans."

Key findings for the G20:

- **Energy-related CO₂ emissions** in G20 countries shot up by 1.8% in 2018 due to rising energy demand. Energy supply is not getting cleaner: despite a more than 5% rise in G20 total renewable energy supply in 2018, the share of fossil fuels in the G20 energy mix remains at 82%.
- In 2018, G20 emissions in the **power sector** increased by 1.6%. While renewables now account for 25.5% of power generation, this is not sufficient to outweigh the growth of emissions from fossil fuel sources. Coal needs to be phased out by 2030 in OECD countries and by 2040 globally.
- G20 **transport emissions** increased by 1.2% in 2018. Low-carbon fuels accounted for less than 6% of the fuel mix. They need to increase roughly ten times by 2050 to keep global warming below 1.5°C. G20 countries need to scale up their policies to ban new fossil fuel cars by 2035 at the latest, reduce emissions from freight transport to net-zero by 2050 and shift towards non-motorised and sustainable public transport.

Cutting government subsidies to the aviation sector, taxing jet fuel and using revenues to invest massively in new carbon free fuels would leverage huge emissions reductions and health benefits.

- G20 emissions in the **building sector** grew more than in any other sector in 2018 (4.1%). Retrofitting existing buildings challenges all G20 and especially OECD countries. New buildings have to be near zero-energy by 2020/25 to keep global warming below 1.5°C.
- G20 countries still provided more than US\$ 127 billion in **fossil fuel subsidies** in 2017. Subsidies have shown a decrease in nine G20 countries (partly due to falling fuel prices), but subsidies for natural gas infrastructure and production have remained stable or increased in many countries (despite lower prices). Diverting only a fraction of these fossil fuel subsidies towards renewables could pay for the clean energy transition and reduce emissions significantly.

“Overall CO₂ emissions go up in all sectors, but we’re seeing some frontrunners emerging that others can learn from, like China’s policies for promoting electric vehicles and public transport”, says Lena Donat, one of the report’s lead authors. “In order for the Paris Agreement to succeed, it is clear that the G20 countries need to be climate leaders and pave the way for solutions that developing countries can benefit from.” The G20 countries are responsible for approximately 80% of global GHG emissions.

This year’s report analyses G20 countries’ performance along 80 indicators for climate mitigation, finance and adaptation against global 1.5°C benchmarks. The 2019 report “Brown to Green: The G20 transition towards a net-zero emissions economy” is the 5th annual review of G20 climate action by Climate Transparency.

Key Findings: Country performance compared / Leaders and laggards

Vulnerability & Adaptation

Extreme weather events led to around 16,000 deaths and economic losses of US\$ 142 billion in G20 countries on average every year (1998-2017). Russia, France, Italy, Germany and India are highest ranked in terms of losses. Limiting global temperature increase to 1.5°C instead of 3°C avoids over 70% of climate-related impacts in the water, health and agriculture sectors. Brazil and Mexico are highly exposed to water scarcity at 1.5°C, while Brazil, France, Italy and Turkey are highly exposed to droughts. To reduce their climate vulnerability all G20 countries have an adaptation plan, except Saudi Arabia.

Mitigation

NDCs: China, the EU and its G20 member states, India, Indonesia, Russia, Saudi Arabia and Turkey are projected to meet or surpass their NDC targets, excluding land use, land-use change, and forestry (LULUCF) emissions. This indicates that the NDC targets are not yet “highest possible ambition” as required by the Paris Agreement. India has the most ambitious NDC compared to its fair share of global emissions to limit global warming to 1.5°C. However, India still needs to act now to prepare sectors for stringent emission reductions.

South Korea, Canada and Australia are the G20 countries furthest off track from implementing their already unambitious NDCs. To limit global warming to 1.5°C, all G20 countries need to strengthen their NDCs. This report underscores that there is plenty of room to scale up climate action for the 2020 NDC update.

Long-term strategies: Canada, France, Germany, Japan, Mexico, the UK and the US have submitted their long-term strategies for 2050 to the United Nations Framework Convention on Climate Change (UNFCCC). Argentina, China, the EU, India, South Africa, South Korea and Russia are currently preparing strategies. France and the UK set a precedence by enshrining net-zero carbon/GHG emissions targets by 2050 in law.

Energy supply: 82% of the G20 energy mix continues to come from fossil fuels. The total primary energy supply of fossil fuels in 2018 increased in Australia, Canada, China, India, Indonesia, Russia, South Africa, South Korea and the US. The energy efficiency of the G20 countries has improved since 1990, but annual efficiency gains are slowing down.

Power: India is the country currently investing most in renewable energy, while Brazil and Germany are the only G20 countries with long-term renewable energy strategies. Brazil leads with 82.5% renewables, while Saudi Arabia, South Korea and South Africa lag behind with shares of only 0-5%. A coal phase-out plan is needed in Australia, China, India, Indonesia, Japan, Mexico, Russia, South Africa, Turkey and the US. Indonesia and Turkey are burning more coal for electricity – their power emissions increased the most in 2018. France, Brazil and the UK reduced emissions in the power sector considerably in 2018 by moving away from fossil fuel power generation.

Transport: Canada, France, Japan and the UK are leading in banning the sale of fossil fuel-based cars. China nearly doubled the share of electric vehicles within one year and has the most ambitious policies to shift towards public transport. The US (24 times the levels of India), Canada and Australia have the highest transport emissions per capita. G20 aviation emissions are increasing rapidly with Australia, the US and the UK having the highest flight emission per capita.

Buildings: The US, Australia and Saudi Arabia had the highest building emissions per capita including electricity-based emissions in 2018. They also lack ambitious policies for substantially reducing emissions in the sector. The EU countries lead with 1.5°C compatible strategies for zero-energy new buildings. The EU, Germany and France are the only G20 members with long-term strategies for retrofitting of buildings in place, but the current annual renovation rate is not on track for a 1.5° pathway.

Industry: The emission intensity of the industry sector is the highest in Russia, India and China. At the same time, India and China are among the G20 countries with the most progressive energy efficiency policies.

Agriculture and land-use: In 2016, G20 GHG emissions from agriculture decreased slightly by 0.4%. Livestock breeding accounts for 40% of agricultural emissions in G20 countries, and indirectly causes emissions through the displacement of forest for grazing and pasture. While Argentina, Brazil and Indonesia have some policies to reduce deforestation or support afforestation, Australia and Canada lack any policies. India, China and Mexico rank high for their long-term deforestation policies.

Finance

Financial policies and regulations: All G20 countries have started to discuss green financial principles but emerging economies lead the way. Brazil and France are the only G20 countries with mandatory climate-related disclosure requirements, whereas Indonesia is the only G20 country with mandatory climate-related risk assessment by financial institutions. Both India and China have mandatory policies for commercial banks to incentivise green loans.

Fiscal policy: G20 countries, excluding Saudi Arabia (no comparable data), provided about US\$ 127 billion in subsidies to coal, oil and gas in 2017 – a decrease from US\$ 248 billion in 2013. This is partly linked to a dramatic fall in oil, gas and coal prices over this time period. Subsidies to natural gas infrastructure and production have increased in several countries. Canada, Argentina and Indonesia are among the countries that have saved billions of dollars by cutting incentives or subsidies to fossil fuels in recent years.

On average, about 70% of CO₂ emissions in G20 countries are unpriced, or priced insufficiently, with Russia, having the highest carbon pricing gap followed by Indonesia, Brazil and China. However, the number of G20 countries that already have or are in the process of introducing explicit carbon pricing schemes is growing. Newcomers in 2018/2019 were South Africa and Argentina.

Public finance: G20 public institutions still financed coal and coal-fired power production internationally at US\$ 17 billion and domestically at US\$ 11 billion on average per year between 2016-2017. Ending coal finance is one of the most crucial steps to achieving the Paris goals. The biggest G20 financiers overseas are China, Japan and South Korea. Public financial institutions in Brazil, Canada, China, France, Germany, the UK and the US restrict public spending for coal.

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Notes to Editors

Please find below a list of country spokespeople, contacts and quotes.

The summary report, in-depth country profiles for all G20 members and a technical note on data sources and methodology can be downloaded here after the embargo lifts:

www.climate-transparency.org/g20-climate-performance/g20report2019

About Climate Transparency

Climate Transparency is a global partnership that brings together experts from research organisations and NGOs in the majority of the G20 countries. Our mission is to encourage ambitious climate action in the G20 countries: we inform policy makers and stimulate national debate.

About the Brown to Green Report

The Brown to Green Report is the world's most comprehensive annual review of G20 countries' climate action and their transition to a net zero emissions economy. The independent, in-depth assessment draws on the latest analysis of international renowned data sets such as the OECD, World Bank and IEA, as well as qualitative data from leading global experts in the field.

The review is based on 80 indicators for adaptation, mitigation and finance compared against 1.5°C global benchmarks and aims to make good practices and gaps transparent. The summary report and 20 country profiles allows the report to be a clear reference tool for decision makers.

This year's policy assessment is more detailed than previous ones. The report features a novel analysis of climate impacts in G20 countries, their adaptation plans and their policies for greening the financial system.

Research partners and quotes

<p>Alvaro Umaña, Co-chair of Climate Transparency</p> <p><u>Contact information:</u> +1 301 537 5244 alvaro.umana@gmail.com Spanish, English, Portuguese</p>	<p>"Just one year before the critical deadline the findings give us hope that countries will find the political will to commit to higher emission reduction targets in 2020 as they promised under the Paris Agreement. For the first time, the report identifies untapped potential and key opportunities for countries to ramp up ambition and as such will be a valuable tool for governments when they update their climate plans."</p>
<p>Peter Eigen, Co-chair of Climate Transparency</p> <p><u>Contact information:</u> +49 172 305 9009 peigen@transparency.org German, English</p>	<p>"Millions of young people want strong climate action now. Governments should act now. Our information will help them to pick the right steps."</p>

<p>Hannah Schindler, Project Coordinator of Climate Transparency HUMBOLDT-VIADRINA Governance Platform</p> <p><u>Contact information:</u> +49 176 477 190 07 hschindler@governance-platform.org German, English, Spanish</p>	<p>“The G20 countries’ current NDCs, if implemented, would still lead to emissions in 2030 that are twice as high as what is need to limit global warming to 1.5°C. We still have a huge challenge ahead of us. But the solutions are already there, they just have to be driven forward by G20 governments.”</p>
<p>Ipek Gençsü, Research Fellow at the Overseas Development Institute (ODI)</p> <p><u>Contact information:</u> +44 77 66 352 364 i.gencsu@odi.org.uk English, Turkish</p>	<p>“A carbon price is the strongest signal a government can send. However, on average, about 70% of CO₂ emissions in G20 countries are unpriced or priced insufficiently. Russia, Indonesia, Brazil and China have the highest carbon pricing gap.”</p>
<p>Pascal Charriau, CEO of Enerdata</p> <p><u>Contact information:</u> +33 4 76 41 43 72 pascal.charriau@enerdata.net French, English, Czech and Spanish</p>	<p>“This report shows with great details the need for increased ambition, but also the increasing gap between existing trends and necessary emissions trajectories. New NDCs to be submitted in 2020 should show clear changes, both on energy consumption stabilisation and energy drivers decarbonisation.”</p>
<p>Argentina: Enrique Maurtua Konstantinidis, Fundación Ambiente y Recursos Naturales (FARN)</p> <p><u>Contact information:</u> +54 911 4070 0397 prensa@farn.org.ar Spanish, English</p>	<p>“Despite the big developments in renewable energy, Argentina is not on track to curve its emissions before 2030, and it is providing the highest fossil fuel subsidies per unit of GDP in the G20. In 2020 the country needs to improve substantially the measures to strengthen its climate commitment.”</p>
<p>Australia: Bill Hare, Climate Analytics</p> <p><u>Contact information:</u> +61 468 372 179, bill.hare@climateanalytics.org English</p>	<p>“Australia needs to decarbonise its electricity generation faster - by 2040 - including through phasing out coal by 2030. Australia’s energy sector is still the second most carbon intensive in the G20. Transport emissions are far above G20 average, and energy supply per capita is more than twice the G20 average. Australia needs to step up its insufficient 2030 target, develop a decarbonisation strategy and implement effective policies in all sectors.”</p>
<p>Brazil: William Wills, CentroClima/COPPE/UFRJ</p> <p><u>Contact information:</u> +55 21 998719827 climatetransparency@lima.coppe.ufrj.br Portuguese, English</p>	<p>“After a strong decrease between 2005 and 2012, preliminary numbers indicate that deforestation is increasing again in Brazil, following a recent trend. To meet its NDC target, Brazil has to strengthen policies on land-use emissions and increase monitoring to reach zero illegal deforestation.”</p>

<p>China: Jiang Kejun, Energy Research Institute</p> <p><u>Contact information:</u> +86 138 0119 9951 kjiang@eri.org.cn kjiang2015@163.com Chinese, English</p>	<p>“China's solar PV and wind power, together with nuclear power are moving rapidly, and China sold over one million electric cars in 2018, almost doubling numbers from 2017. It also has the most progressive public transport policy in the G20. Despite that, emissions in China rose again in 2018 after levelling out between 2014 and 2016. Under its current policies, China's emissions are expected to peak before 2025.”</p>
<p>France: Lola Vallejo, Institute for Sustainable Development and International Relations (IDDRI)</p> <p><u>Contact information:</u> Press Officer: Brigitte Bejean, +33 1 45 49 76 37 brigitte.bejean@iddri.org Spanish, French, English</p>	<p>“Although there are some positive recent developments in France, such as the coal phase-out by 2021, adoption of 2050 carbon neutrality legislation and an end date of 2040 for internal-combustion-vehicle sales, the country is likely to miss its national GHG emissions reduction and 2020 renewable target. France should for example scale up renovations to low-energy building standards, to reach 500,000 houses per year as soon as possible.”</p>
<p>Germany: Lena Donat, Germanwatch</p> <p><u>Contact information:</u> +49 157 852 008 66 donat@germanwatch.org German, English, Spanish</p>	<p>“Germany's 2030 emission reduction target is not in line with the Paris Agreement and the government's proposed climate package would miss even this weak target. It is now on the German parliament to beef up the climate package, especially for the transport sector.”</p> <p>“Global CO₂ emissions go up in all sectors, but we're seeing some frontrunners emerging that others can learn from, like China's policies for promoting electric vehicles and public transport. In order for the Paris Agreement to succeed, it is clear that the G20 countries need to be climate leaders and pave the way for solutions that developing countries can benefit from.”</p>
<p>India: R R Rashmi, The Energy and Resources Institute (TERI)</p> <p><u>Contact information:</u> Thomas Spencer +91 877 94 89 229 thomas.spencer@iddri.org French, German, English</p>	<p>“Among the G20 countries, India has the most ambitious NDC. However, it still needs real action now to prepare the different sectors for stringent emission reductions.”</p>

<p>Indonesia: Fabby Tumiwa, Institute for Essential Service Reform (IESR)</p> <p><u>Contact information:</u> +62 811 949 759 fabby@iesr.or.id Bahasa, English</p>	<p>“The transition from fossil fuel within the power and transport sectors could help Indonesia meet the Paris Agreement target. Measures include reducing new coal power plant capacity and tripling renewable energy share in the power sector by 2030, as well as strengthening energy efficiency implementation. In transport, rapid electrification of transport and increasing fuel economy standard could be effective measures.”</p>
<p>Japan: Kentaro Tamura, Institute for Global Environmental Strategies (IGES)</p> <p><u>Contact information:</u> +81 46 855 3812 tamura@iges.or.jp Japanese, English</p>	<p>“Japan’s 5th Strategic Energy Plan envisages the construction of new coal-fired power stations. This could mean that up to a quarter of its electricity is supplied by coal in 2030. The country needs to include the phasing out of coal in its next Strategic Energy Plan and phase out international finance for coal to keep global warming below 1.5°C and reduce the risk of stranded assets.”</p>
<p>Mexico: Mariana Gutiérrez Grados, Iniciativa Climática de México (ICM)</p> <p><u>Contact information:</u> +521 (55) 34557805 mariana.gutierrez@iniciativaclimatica.org Spanish, English</p>	<p>“Mexico’s transport sector is still dominated by fossil fuels. A transition in transport offers many benefits such as reduced air pollution, congestion and the amount or accidents. The government should therefore adopt a strategy to phase out new fossil fuel light-duty vehicles by 2035.”</p>
<p>South Africa: Andrew Marquard, Energy Research Centre, University of Cape Town</p> <p><u>Contact information:</u> +27 82 875 5474 andrew.marquard@uct.ac.za English, Afrikaans</p>	<p>“South Africa continues to have the highest emission intensity in the G20. We need to urgently stop building expensive new coal plants, invest in cheaper wind and solar power, and most importantly, develop a credible and well-resourced just transition plan as a basis for phasing out coal.”</p>